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No. XVI.

SAFE LOCK.

The SILVER ISIS MEDAL *was presented to Mr. T. E.* BONNER, 38, *Tabernacle Walk, Finsbury, for a Safe Lock; a Model of which has been placed in the Society's Repository.*

SIR, *London, April* 7, 1828.

KNOWING it to be the wish of the Society of Arts to reward merit where it is due, and believing them to be competent judges, I offer for their consideration a lock, on a new principle and of the greatest safety, as I believe it is impossible to pick or open it with any thing but its own key. It is extremely simple, being without the least complication, and perfectly safe, as will be perceived on examination. The key should be held inclining forward when put into the key-hole, then pressed to the bottom before turned. It will be found, that should any means be used to force it, they will be of no avail, as it is the key alone that acts upon the lock, and not the follower; but should they be successful in moving the follower, when the instrument touches the ward, it must throw the follower forward in the form of a bolt, and so lock the main bolt in such a manner as not to be moved by them: the true key will, however, put the parts right again, if, after passing the ward, it is lifted about the thirty-second part of an inch, and turned backwards till the bolt is unlocked.

This lock may be adapted to any purpose, either bookcase, money-chest, drawer, desk, cupboard, or door, and may be rendered considerably lower in price than many patent locks of the present day.

I am, Sir, &c. &c.

A. AIKIN, *Esq.* T. E. BONNER.
Secretary, &c. &c.

Reference to the Engraving. Plate IX.

The chief novelty of this lock consists in introducing a barrel which turns with the key, and keeps the hole shut up, all but the thickness of the key-pipe, and also a secret bolt, that is very likely to be moved, so as to secure the main bolt, by any thing introduced to pick the lock. In fig. 1 the upper plate *a a* fig. 3 is removed, and the bolt *b b* is withdrawn; in fig. 2 the barrel *c* is also removed, and the bolt is shot forward; fig. 3 is a section; fig. 4 the key; fig. 5 a section of the key-hole from *d* to *d* in fig. 6, which is a top view of the cap or plate *a a; c* is the top of the barrel, and *e* its bottom-plate; this is perforated at *f*, to let the nib *g* of the key pass through the top *c;* is also notched at *h* for the key to pass; there is also a notch *i* in the plate *e*, for the detent spring *j* to catch in. The key-hole *d* is shorter than the key, and has a pipe *k*, on which the barrel turns; *l* the bottom pivot of the barrel, which passes through the lower plate *m m* of the lock. When the key is taken out, the detent *j* catches in the notch *i*, and leaves the gap *h* and perforation *f* coincident with the key-hole. When the key is introduced, its nib acts on the slope *n*, fig. 2 of the detent catch *j*, and pushes it back as in fig. 1; the key can then carry round the barrel, and when arrived at the place shewn in fig. 1, a false key would be liable to move the nib *o* of the safety bolt, and push its pin *p* behind the stop *q* of the bolt *b b*, (which is dotted as shot out,) and prevent its being moved; the nib *g* of the proper key is fitted to pass under this projection *o*, without touching it in its way to move the tumbler *r* and liberate the bolt, while the shorter part *s* of the key moves it back; fig. 7 is a partial section of the cap plate *a a* and barrel *c c*, with the key in it. A straight pin can move the detent *j* and liberate the barrel, and a slightly hooked pin may move it round when opposite the place where the motion of the tumbler begins; the pipe *k* and centre-pin forbid any thing to be introduced that is crooked enough to reach the tumbler; or should any flexible or springy wire reach the tumbler, the false notch *t* in the bolt would receive it, and equally detain the bolt; besides, any bent piece that could move the bolt must be put in at the key-hole before the barrel is moved, and must go round with it, and render it more difficult, if not impossible, for the other springing piece to enter and grope for the tumbler, there being no other outlet in the barrel than that which would be occupied by the substitute for *s*. Again: if we suppose a thin slip of iron bent to a similar outline with the key to be used, it would be liable to move the safety bolt *o p;* and being of necessity as thin as the key pipe, it would yield or spring away, rather than move the tumbler and bolt.